

R E M A R K S

Claims 1, 2, 3, 4, 9, 13, 15 and 16 have been amended, to overcome grounds of objection or rejection under 35 U.S.C. §112 and/or to define further and more fully certain novel and distinguishing features of the invention. Claims 5, 6, 8, 12, 17 and 20 have been cancelled, to expedite prosecution but without prejudice to the scope of protection to which applicants are believed to be entitled, and changes have been made in the dependence of claims 3, 9, 10, 11, 13, 18 and 21. Claims 14 and 19 are maintained without change (apart from the amendments herein made to the claims on which they are respectively dependent).

Support for the amended recitals in claims 1 and 15 is found in original (now cancelled) claim 17 and in the specification at p. 2, line 22; p. 3, line 25; p. 3, lines 4-5; and p. 4, lines 11-18. Amended claims 2 and 3 respectively set forth recitals originally contained in now-cancelled claims 8 and 7. The added recital in amended claims 4 and 16 is supported by the disclosure in the specification at p. 4, lines 25-26. The amendments to claims 9 and 13 merely add an indefinite article before "sheet." Attached hereto is a marked-up version of the amended claims headed "Version with Markings to Show Changes Made."

Since this Amendment does not increase either the total number of claims or the number of independent claims, no additional fee is necessary.

Claims 1 - 4, 9 - 11, 13 - 16, 18, 19 and 21 are in the application. Of these, claims 1 (workpiece) and 15 (method of treating a workpiece) are independent; claims 2 - 4, 9 - 11, 13 and 14 are dependent on claim 1 while claims 16, 18, 19 and 21 are dependent on claim 15. Claims 15, 16, 18, 19 and 21 have been withdrawn from consideration as directed to a non-elected invention, and claims 1 - 4, 9 - 11, 13 and 14 have been rejected on various grounds, discussed below.

Election/Restrictions

In response to the final requirement for restriction set forth on p. 2 of the Office Action, applicants respectfully disagree with the Examiner's statement that an anodic oxide film "is not structurally limited to being formed anodically." While an amendment has been made to claim 1 in this regard, it is also pointed out that electron microscope pictures show that the residual anodic film has a recognizable structure which is not the same as that of an air formed film, for example. Therefore, it is believed that the Examiner's assertion is incorrect.

The Office Action states that rejoinder of the method claims with the article (workpiece) claims will be considered upon indication of allowability of the article claims, and if the article and method claims share all limitations. With this in mind, applicants in amending independent claims 1 (article) and 15 (method) herein have endeavored to set forth corresponding limitations in both, except that the article claim does not contain any expressly recited counterpart of the step of "pre-cleaning a surface of the workpiece" set forth in the method claim.

The Examiner has referred to the precleaning step to justify the restriction requirement. Applicants respectfully submit that precleaning is carried out automatically as a prelude to surface treatment operations to provide a good uniform surface for the treatment and to avoid rapid contamination of the surface treatment solutions themselves. However, the precleaning step is not required for the product claims, particularly as it is not detectable in the finished product.

Specification

Although on p. 2 of the Office Action an objection is made as directed to the abstract of the disclosure, it is apparent that the objection is directed to the specification as a whole and not just to the abstract.

In substance, all the asserted "grammatical errors" in the abstract and elsewhere (e.g. at p. 4, lines 23 and 31, and p. 5, line 5) are seen to involve the omission of an article ("a," "an," etc.) before "sheet." Applicants submit that in the context of the specification, and in conventional usage in the art, omission of any article before "sheet" is both intentional and grammatically proper, and is not an error. Such usage is found, for example, in references of record, including Wieserman et al. '210 (see col. 3, line 42; cf. Col. 14, lines 28 and 31, "stock"); Wefers et al. '715 (col. 3, line 62; col. 10, line 5); and Terai et al. '349 (col. 5, line 47). One may properly speak of "aluminum sheet" or "painted sheet" in this sense, without an article, just as (for instance) one may speak of "aluminum foil" without an introductory article.

Reconsideration and withdrawal of the objection to the specification are therefore courteously requested.

Claim Objections

The objections to claims 3 and 6 have been obviated by deletion of the involved recital from claim 3 and cancellation of claim 6. Claims 9 and 13 have been amended to overcome the objection.

Claim Rejections - 35 U.S.C. §112

It is submitted that the amendments herein made to claim 1 fully overcome the rejection under §112, first paragraph, relating to the exclusion of "silicon-organic compounds." The amended claim omits that term, and now specifies that Cr, Mn, Mo, Si, Ti, Zr and F are present in inorganic form; support for this recital is found in the statement in the specification, at p. 3, lines 3-6, that "These values are preferably inorganic in the sense that they do not contain metal-carbon (or Si-C) bonds although they may be used in conjunction with organic polymers." The immediately subsequent sentences in the specification support the inclusion of F in the list.

Turning to the rejections under §112, second paragraph, set forth on p. 4 of the Office Action, applicants believe that the rejection of "claim 14" was intended as a rejection of claim 1. All recitals of claim 1 to which this rejection is directed have been deleted from the claim as herein amended. Again, while applicants do not concede that the alternative language heretofore included in claims 2 and 3 was improper, that language has now been deleted from both claims. The alternative recital ("one or more") now in claim 2 as amended is clearly proper.

With respect to claim 9, applicants note that alternative recitals in claims are not *per se* improper. "A paint layer **or** an adhesive" in claim 9 unambiguously expresses that the adhesive is an alternative to the paint layer and requires no further clarification.

The cancellation of claim 12 obviates discussion of the rejection of that claim under §112, second paragraph.

Rejection under §102(b)

With reference to the rejection of claims 1, 2, 3, 9, 13 and 14 under 35 U.S.C. §102(b) as anticipated by Matsuo et al. (EP 0 426 328 A2), it may initially be noted that Matsuo et al. is mainly concerned with steel plates, although there are references to aluminum. At p. 4, line 39, Matsuo et al. states that "a chromate pretreatment **or** an anodically oxidizing film forming treatment may be employed." Clearly these are shown as alternatives. Certainly there is no suggestion that the one should be employed over the other. Actually the short statement of Matsuo et al. here virtually makes applicants' case. A person skilled in the art would find it very surprising that applicants propose a conversion or no-rinse treatment over an anodic film. He or she would consider it a waste of time and money; moreover, an artisan of ordinary skill would likely think that the conversion coat treatment would remove a very thin anodic film of the type the applicant prefers to use, in which case there would obviously be

no benefit in carrying out the invention. In fact, in applicants' claimed article, electron microscope pictures clearly show the two films present after the complete treatment.

While the Examiner states that Matsuo et al. teaches coating a work article surface with an anodic coating (chromate conversion coating) followed by a resin coating, the resin coating containing Mo or Si is in no way a conversion (or no-rinse) coating; the inorganic ions are there for totally different reasons and there is no teaching of the applicants' invention.

Therefore it is submitted that Matsuo et al. does not anticipate the recitals, in claim 1, of

"an oxide film that is formed anodically . . . and a coating on the oxide film, which coating consists essentially of an adhesion promoter . . . applied as a no-rinse coating"

Since the reference teaching would not suggest (or motivate the provision of) that defined combination, for the reasons explained above, it is further submitted that the recital just quoted distinguishes claim 1 patentably thereover.

Claims 1 and 13 have also been rejected under 35 U.S.C. §102(b) as anticipated by Totsuka et al. Totsuka et al., however, does not first anodize the material; hence there can be no anticipation of claim 1, on which claim 13 depends. Of course, it is common practice in the art either to anodize or to apply a conversion (or no-rinse) coat, but not to do both, which is applicants' invention. Since the reference does not suggest doing both, it would not make obvious the article of claim 1, which distinguishes patentably over Totsuka et al. by virtue of the above-quoted recital.

Claims 1 - 3 have additionally been rejected under 35 U.S.C. §102(b) as anticipated by Sugama. The Sugama patent teaches the *per se* use of polyacids over an anodic film. Polyacids by themselves have been deleted from claim 1 as herein amended, although the claim recites the optional presence of an organic polymer in proposed claim 1 (together with Cr, Mn...), which may

include polyacids. Polyacids may be included in certain proprietary treatments along with Cr, Mn, etc., which proprietary treatments work well as the second part of applicants' anodizing and conversion coat invention. Of course, it is only the inorganic species (Cr, Mn, etc.) -- not disclosed or suggested by Sugama -- which are mandatory and the polyacids or the like are merely an optional adjunct. The recital of the inorganic species in amended claim 1 precludes anticipation by Sugama, and distinguishes claim 1 patentably thereover.

Claim 1 is further rejected under 35 U.S.C. §102(b) as anticipated by Børresen et al., which describes the use of a strong base such as NaOH to improve the adhesion of aluminum to polysulphide materials. The aluminum may be anodized (but is not necessarily anodized, see col. 2, lines 23-28). Moreover the strong base treatment is not a conversion type of coating. Of the inorganic ions which are mentioned only Si appears in the applicants' list of mandatory ions; and in Børresen et al., it is employed only as a strong base (sodium silicate) not as a conversion type coating. Consequently, Børresen et al. fails to anticipate or make obvious the article of amended claim 1.

Claims 2, 3, 9, 13 and 14, rejected on one or more of the §102(b) grounds discussed above, incorporate all the limitations of amended claim 1 on which they are directly or indirectly dependent, and consequently distinguish in like manner over the references.

Rejection under §103(a)

With regard to the obviousness rejection of claims 4, 10 and 11, it has been explained above that Matsuo et al. does not teach or suggest the treatment of anodizing and conversion coating, and would not make obvious, to a person of ordinary skill in the art, to carry out the two stages of applicants' invention, to achieve the article defined in amended claim 1. Thus, claims 4, 10 and 11 are patentably distinguishable over Matsuo et al by virtue of

their dependence on claim 1, regardless of what the reference may be said to show respecting the additional features they recite.

The beneficial results of the present invention are clearly shown in Example 1 which shows that the invention used with a non-chromium-containing conversion/no rinse treatment in the second state is as good as or better than the single treatment (Accomet C) containing chromium. This is a particularly important application of the invention because there is a growing move in many countries to avoid the use of chromium (particularly chromate) treatments for environmental reasons.

For the foregoing reasons, it is believed that this application is now in condition for allowance. Favorable action thereon is accordingly courteously requested.

Respectfully,

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I hereby certify that this paper is being deposited this date with the U.S. Postal Service as first class mail addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.

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Date APRIL 17, 2003

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1, 2, 3, 4, 9, 10, 11, 13, 15, 16, 18 and 21 have been amended as follows:

1. (Twice Amended) An aluminium workpiece [having] comprising on a surface thereof: an [anodic] oxide film that is formed anodically, which film is 10 to 200 nm thick; and a coating on the oxide film, which coating consists essentially of at least one adhesion promoter [selected from at least one of polyacrylic acid and salts and esters thereof, poly(hydroxyphenyl)styrene and pretreatments comprising] containing one or more of Cr, Mn, Mo, Si, Ti, Zr and F, [providing that promoters based on silicon-organic compounds are excluded] optionally containing an organic polymer, wherein the Cr, Mn, Mo, Si, Ti, Zr and F are present in inorganic form, and wherein the adhesion promoter is applied as a no-rinse coating, which is a composition consisting essentially of the adhesion promoter in a volatile vehicle which evaporates leaving a film of the adhesion promoter, or a conversion coating, which reacts chemically with the oxide film to form a film of the adhesion promoter.

2. (Amended) The aluminium workpiece of claim 1, wherein [there is a paint, lacquer, varnish or enamel layer overlying] the adhesion promoter [coating] is one containing one or more of Cr, Mn, Mo, Si, Ti and Zr.

3. (Amended) The aluminium workpiece of claim [2, which is aluminium sheet of which at least one surface has the anodic oxide film, the adhesion promoter coating and the paint, lacquer,

varnish or enamel layer] 1, wherein the organic polymer is selected from at least one of polyacrylic acid and poly(hydroxyphenyl)styrene.

4. (Twice Amended) The aluminium workpiece of claim 1, wherein the [anodic] oxide film is [50-200 nm thick] a barrier layer.

9. (Amended) The aluminium workpiece of claim [8] 1, which is an aluminium sheet of which at least one surface has the [anodic] oxide film, the adhesion promoter and a paint layer or an adhesive overlying the adhesion promoter.

10. (Twice Amended) The aluminium workpiece of claim [8] 1, wherein the [anodic] oxide film is 10-50 nm thick.

11. (Twice Amended) The aluminium workpiece of claim [8] 1, wherein the adhesion promoter coating is present at a weight of 2-100 mg/m².

13. (Twice Amended) The aluminium workpiece of claim [8] 1, which is a primed sheet for automotive use.

15. (Twice Amended) A method of treating an aluminium workpiece, which method comprises precleaning a surface of the workpiece, anodising the workpiece so as to form an anodic oxide film 10 to 200 nm thick on the surface and applying to the anodic oxide film a coating [consisting] which consists essentially of at least one adhesion promoter [selected from at least one of polyacrylic acid and salts and esters thereof, poly(hydroxyphenyl)styrene and pre-treatments comprising] containing one or more of Cr, Mn, Mo, Si, Ti, Zr and F, [provided that adhesion promoters based on silicon-organic compounds are excluded] optionally containing an organic polymer, wherein the Cr, Mn, Mo, Si, Ti, Zr and F are present in inorganic form, and wherein the

adhesion promoter is applied to the anodic oxide film in the form of a no-rinse coating, which is a composition consisting essentially of the adhesion promoter in a volatile vehicle which evaporates leaving a film of the adhesion promoter, or a conversion coating, which reacts chemically with the oxide film to form a film of the adhesion promoter.

16. (Amended) The method of claim 15, wherein [there is applied over the adhesion promoter coating a paint, lacquer, varnish or enamel layer] the anodic oxide film is a barrier film.

18. (Twice Amended) The method of claim [16] 15, wherein the aluminium workpiece is aluminium sheet.

21. (Amended) The method of claim [20] 19, wherein a paint layer or adhesive is applied over the adhesion promoter coating.